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Comparison between the antifungal activity of some local isolates of Lactobacillusspp. and Lactobacillus reuteri ATCC23272 against Trichophytonrubrum

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The present study aimed to compare between the effects of some locally isolates of *Lactobacillus spp.* and *Lactobacillus* reuteri ATCC 23272 on the growth of the fungal pathogenT. rubrum. Out of 30 samples of infected hair, nail and skin were isolated from patients with dermatophytosis, three clinical isolates were identified as Trichophyton rubrum according to the conventional laboratory methods and molecular approach which includes gene-specific PCR for amplified ITS gene which resulted in PCR product about 690 bp and PCR-RFLP by involvement of BstN1 restriction enzyme which resulted in distinguishing bands. A total of 20 samples collected from different sources, two species of Lactobacillus including L. collinoidis and L. acidophilus identified according to the colonial morphology on MRS agar, microscopic examination, biochemical testes and API 50 CHL kit. The antagonistic activity of both CFS and entire cells of locally isolates of Lactobacillus species in addition to L. reuteri ATCC 23272 were studied on T. rubrumby agar well diffusion assay and MIC revealed that the best antifungal activity was recorded by L. collinoidis followed by L. reuteri ATCC 23272 and L. acidophilus respectively. The results of antagonistic effect of the entire cells of Lactobacillus species against T. rubrum were highest than CFS. Identification and quantification of phenylacetic acid (PLA) as antifungal compound was determined by UV-HPLC analysis for the fermented CFS of Lactobacilli species and revealed that the highest concentration of PLA was recorded in the fermented CFS of L. acidophilus about 16.4 ppm followed by L. collinoidis and L. reuteri ATCC 23272 about 14.6 and 13.2 ppm respectively whereas the concentration of PLA in the standard was 3 ppm only. The present study investigated that the antagonistic activity of whole cells of Lactobacillus species against Trichophyton rubrum was more efficient than the CFS and the locally isolate of Lactobacillus collinoidis showed the highest antifungal activity than Lactobacillus reuteri ATCC 23272.



Figure1: In vitro antagonistic effect of the CFS with glycerol of Lactobacillus spp. against Trichophyton rubrum showing different diameters of inhibition zones: L1. Lactobacillus reuteri ATCC 23272. L2. Lactobacillus collinoidis. L3. Lactobacillus acidophilus.

Biography

Khaled A Habeb has experience in teaching and supervision of both undergraduate and post graduate students. He has taught different subjects belonging to microbiology such as Medical Microbiology, Clinical Mycology, Microbial Toxins and Microbial Physiology. He has experience in evaluation and improving of probiotics application.

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